UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,162	10/03/2006	Hughes Jaccard	2006_1323A	6061

513 7590 11/05/2009

WENDEROTH, LIND & PONACK, L.L.P.
1030 15th Street, N.W.,
Suite 400 East
Washington, DC 20005-1503

EXAMINER	
BERCH, MARK L	

ART UNIT	PAPER NUMBER
1624	

MAIL DATE	DELIVERY MODE
11/05/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/591,162	JACCARD ET AL.	
	Examiner	Art Unit	
	Mark L. Berch	1624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-47* is/are pending in the application.

4a) Of the above claim(s) *23-43* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 44-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/03/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-2, and 44-47 are rejected as being drawn to an improper Markush Group. The claims are drawn to multiple inventions for reasons set forth in the requirement for restriction. This does not constitute an art recognized genus. Because of the marked structural differences at a part of the molecule essential for utility, the claims are deemed to lack unity of invention (see ***In re Harnish***, 206 USPQ 300). The claims are examined only to the extent that they read on the elected invention. Cancellation of the non-elected subject matter will overcome the rejection. This can be done by setting A as purine.

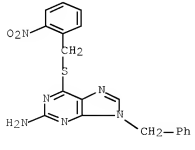
Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Noell.

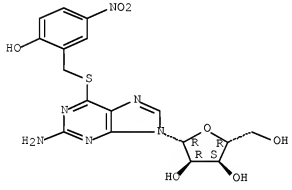
See compound X, and the specific choice at page 572, choice 8, which corresponds to A=aminopurine, R1=R5=benzyl, X=S, R3=phenyl, R4=bond, L1=nitro.



The next choice is similar but with R3=heteroaromatic group.

Claims 1-3, are rejected under 35 U.S.C. 102(b) as being anticipated by Baer.

See Table 5, the compound HNBTGR, 6-(2-hydroxy-5-nitrobonzylthio)guanine riboside; NBMPR, which corresponds to A=aminopurine, R1=R5=substituted heterocycle, X=S, R3=phenyl, R4=bond, L1=nitro or OH.



Claims 1-4, 6-9, 12, 14, are rejected under 35 U.S.C. 102(b) as being anticipated by Zheng.

See the first 6 compounds of figure 1, which corresponds to A=purine, R1=amino (which would qualify as a spectroscopic probe), X=O, R3=phenyl, R4=bond, L1=radiolabel.

In addition, there are the benzylated versions 6a, 6b, 6c, 1a. 1b, and 1c, in which R1=R5=benzyl, and L1 is hydroxymethyl for the first three, and radiolabled for the second three.

Claims 1-4, 6-9, 12, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Vaidyanathan.

See compounds [18F]6 in scheme 1, and compounds 6-13 on page 872, including the radio-iodinated version of 7 at the end of scheme 2. The rejection is similar to above, with the amino qualifying as R1 is all compounds.

Claims 1-4, 6-9, 12, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Baker.

Note the Table 1 compounds 3-18, corresponding to X=S, R3 as phenylene, and the labels as the amide or urea and also as the terminal group, the halogen (e.g. compound 3), or the sulfonyl halide (compound 4). Alternatively, the amide or urea will qualify as the linker. R1 is the 6-position substituent of OH or NH22 as L2 (with R2 as bond)

Claims 1-4, 6-9, 12, 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Damoiseaux.

See type 2, represented by compound 8. These are guanine based oligonucleotide with X=O with the biotin substituent at the right end being the L1 label, with the amino qualifying as R1. In addition, the amide linkages in 2 would also qualify as a second label. The intermediate of formula 4 also meets the claim language.

Claims 1-4, 6-9, 12, 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Keppler.

This rejection is similar to those above. See the three structures in Figure 1C, which differ only in the label used. Again, the amino will qualify for R1.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified

or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., ***In re Berg***, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); ***In re Goodman***, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); ***In re Longi***, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); ***In re Van Ornum***, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); ***In re Vogel***, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and ***In re Thorington***, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-33, 44-47 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2, 4, 5, 8-25, and 29-31 of copending Application No. 10529651. Although the conflicting claims are not identical, they are not patentably distinct from each other because there is no line of demarcation between the cases. The claims in 10591162 are just somewhat broader than those of 10529651. The claims in 10591162 call for the R1 group to be attached to the purine, but 10529651 permits such a thing as well, as R 2 in 10529651 could be a saccharide, or R6 can be an amino and in fact, usually is an amino, which meet the definition of R1.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-22, 44-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. R3 is defined as having an "unsaturated alkyl or cycloalkyl ... group with the double bond ..." An alkyl group cannot have a double bond, nor can a cycloalkyl. Suggested is alkenyl or cycloalkenyl.
2. The term "label" in claim 1 is vague. Pretty much any group which is capable of reacting with anything at all can be a label. As a practical matter, a label can be pretty much anything except H, which is not normally called a label. There is no way of knowing what, if anything is required by such a term. How could one show that something is not in fact an label? There are UV labels, a fluorescent labels, phosphorescent labels and other types of chemilumunescent labels. There are spin labels or other paramagnetic labels, along with ferromagnetic, and diamagnetic labels. There are enzymatic labels (such as glycose oxidases), antigens, antibodies, and haptens as labels. There are light scattering labels (e.g. quantum dot or nanoparticle) and calorimetric labels . There are an array of chemically reactive labels such as sulfhydryl-reactive labels and amine-reactive labels. There are photolabile labels, photoreactive labels. What is a label really depends on what the detection system is. Almost anything can be a label unless it is chemically and radioactively and wave-energy inert.
3. The definition of label in claim 2 is also unclear. Note that L is a moiety, yet most of the choices are molecules, e.g. "a molecule which is one part...." Or just plain "molecule" in

claim 21. The term "a library...." Makes so sense, since a library is a collection, not a moiety or even a molecule. The term "a molecule that is suspected to interact with other biomolecules" is unclear because it is not clear what a "biomolecule" is, and because "interact" is an extremely broad term, as it would cover even hydrogen-bonding and other weak van der Waals interactions. Another term has "desirable" --- but desirable by what standard? Nearly all the terms are unclear.

4. The term "linker" is indefinite. It states where something is, but not what it is. It is not even clear whether the term does or does not cover a valence bond itself.
5. R3 is a divalent group, and must be defined as such, e.g. "phenylene", not "phenyl" in claim 2.
6. Also in this regard, the term "1-alkenyl" doesn't make sense, since one does not know which direction the numbering system goes.
7. R3 is required by claim 1 to have a double bond, but claim 2 lists the alkinyl group, which has a triple bond. Did applicants intend triple bond as an alternative in claim 1? Likewise claim 14 and 29.
8. In claim 2, R4 choice b) has an inconsistency. It has "and the adjacent carbon atoms are substituted by oxo" giving an amide. Because of the plural, on actually gets C(O)-NH-C(O), which is an imide.
9. The same issue arises in c), so that one gets C(O)-O-C(O), which is an anhydride, not an ester.
10. R4, choice (b) in claim 2 is unclear is unclear for another reason. The material before "representing" would appear to cover both NHCO and CONH, but the claim goes on to give only the former. Is only the former intended? In addition, the "or more" would

appear to permit NHNHCO as well as the above mentioned NHCONH, but again, these do not appear after the "represents". Are these included?

11. A similar problem occurs for choice (c). Is e.g. –C(O)-O- intended?

12. The term "interacting spectroscopic probes" in claim 46 is unclear. Interacting how? To what degree?

13. The negative definition in (a) of claim 47 is unclear. How can one definately establish that there is no recognition?

14. The scope of AGT (O(6)-Alkylguanine-DNA alkyltransferase) is unclear. Is it just human AGT intended? AGT is found in organisms as diverse as bacteria and archaeons.

15. Similarly, "mutant AGT" is unclear. Mutant as compared to what?

16. The term "specific binding pair" in claim 20 is unclear. It is presumably the opposite of a "non-specific binding pair", but where is the line between the two? Is this something that will bind to one thing and one thing only (i.e. not two things)? How could one prove that the group had such a property?

17. The wording "a moiety which is one part of a specific binding pair selected from biotin...." is unclear for because of the "part:. What part would that be? For example, Streptavidin is a protein, which means that it has e.g. guanine present as a part, so does this read on guanine? Avidin has a urea group, so with this cover a urea group? Another "part" of avidin is a tetramethylene group. Does that mean that any compound with a tetramethylene is embraced?

18. Claim 31 is very unclear. It is unknown what "manipulating" is supposed to cover. How can a protein be "incorporated" into another fusion protein?

19. Claim 22 does not set froth a well defined group. Showing that something is not in the category would be quite difficult, since there are so many different things that can get transported, and so many different types of cells.

20. The claim 2 provision for a plurality of labels is unclear. The formula shows only one L. If R4 can have several L groups attached, then the formula must be amended accordingly. Or is the second L attached to the first L? Note in this regard that R4 is an alkylene group, which has exactly two bonds, one of which must be used to attached to R3.

21. It is unclear where the list of labels (for both L1 and L2) in claim 2 ends. This is important because there can be a plurality of labels, but things that are not labels, there cannot be a plurality of these.

22. At next to last line of claim 2, what does "molecule with membrane-inserting properties" mean? Is this something which inserts a membrane into something, in which case, into what? Is it something which attaches itself to a membrane, i.e. inserts itself onto a membrane? Is it something which passes through? And in any case, what sort of membrane? Is this a cell membrane, or would it cover organ membranes such as a mucous membrane, or would it cover artificial membranes such as Polymeric membranes?

Specification

The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark L. Berch whose telephone number is 571-272-0663. The examiner can normally be reached on M-F 7:15 - 3:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached on (571)272-0661. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark L. Berch/
Primary Examiner
Art Unit 1624

11/5/2009